What is claimed is:

1. A molding process of a composite material including a high-thermal-conductor and a room temperature magnetic refrigerant material, wherein said room temperature magnetic refrigerant material is nested with said high-thermal-conductor to obtain said composite material.

2. The molding process of claim 1, wherein said room temperature refrigerant material is processed to particles, sheets or filaments of appropriate size by crushing, ball grinding, plasma spray coating or other machining methods to the minimum section size of more than 0.001 mm; said high-thermal-conductor is then embedded in said room temperature magnetic refrigerant material; if the melting point of said magnetic refrigerant material is lower than that of said high-thermal-conductor, said room temperature magnetic refrigerant material is embedded in said high-thermal-conductor.

3. The molding process of claim 1, wherein said composite material is obtained by stacking multiple sheet units and creating salient points between said sheet units to form liquid paths; said sheet unit is comprised of two metal sheets and a liquid thermal conductive agent therebetween; said liquid thermal conductive agent includes super-paramagnetism or ferromagnetism room temperature magnetic refrigerant particles, sheets or filaments; and said sheet units are pressed completely together at designated points to form small isolated areas.

4. The molding process of claim 1, wherein said room temperature magnetic refrigerant material is processed to sheets, strips or filaments; said high-thermal-conductor is inserted between said sheets, strips or filaments; and said high-thermal-conductor and the said sheets, strips or filaments contact each other closely.

5. The molding process of claim 2, wherein the melting point of said high-thermal-conductor is different from that of said room temperature magnetic refrigerant material selected; melt said lower melting point high-thermal-conductor or room temperature magnetic refrigerant material under the vacuum or inert atmosphere; add said higher melting point room temperature magnetic refrigerant material or high-thermal-conductor therein; cool the metal fluid containing the higher melting point material under the vacuum or inert atmosphere to a solid; and machine said solid to small balls with diameters of less than 0.5 mm.

6. The molding process of claim 3, wherein said super-paramagnetism or ferromagnetism room temperature magnetic refrigerant material is cut, crushed, ball grinded, plasma spray coated or processed by physical or chemical methods to particles with the particles size less than 0.0001 mm; prepare metal sheets, add said particles into a liquid thermal conductive agent, seal said liquid thermal conductive agent containing said magnetic refrigerant material between said two metal sheets and compress them to sheet units of thickness less than 0.1 mm; divide said sheets into small isolated areas by completely pressing together the said sheet units at the designated points, stack said sheet units and create salient points between said sheet units to form said liquid path; said sheets are comprised of copper; the height of the salient points is not more than the thickness of the sheet units and a metal powder with the particle size of 0.1-1 mm is spread therebetween; and the thickness of the stacked sheet units is between 1 mm and 100 mm.

7. The molding process of claim 3, wherein the thickness of said sheets is less than 0.1 mm; the thickness of said sheet units is less than 0.2 mm; the thickness of said stacked sheet units is between 1 mm and 100 mm; and said fluid paths exist between said sheet units.

8. The molding process of claim 3, wherein the height of said salient points is no more than the thickness of said sheet units; and a metal powder with the particle size of 0.1-1 mm is spread between said sheet units.

9. The molding process of claim 4, wherein the thickness of a gadolinium sheets is 5-100 μm; the thickness of a copper sheet is 5-100 μm; and said gadolinium sheets and said copper sheets are stacked alternately together.

10. The molding process of claim 4, wherein an aluminum foil is inserted between said gadolinium and copper sheet; the resulting stacked sheet is then compressed and heated to at least 934 K to melt said aluminum foil and to obtain a closer contact between said gadolinium and said copper sheet

11. The molding process of claim 10, wherein said stacked sheets are processed to honeycombed shape.

12. The molding process of claim 5, wherein the surface of said balls is plated a layer of oxidation proof metal.